top of the homepage.

The 2007 BSPB/STRI Turfgrass Seed Listings booklet is also available to download from the website, free of charge.

### NEW BRONZED-LEAF BEAUTY

Ball Colegrave have added the new bronze-leaf Nonstop® Mocca to their distribution list. With its large fully double flowers, Nonstop Mocca contrasts exceptionally well with foliage. It combines early flowering with a narrow



blooming window, low production costs and an excellent garden performance. Nonstop® Mocca' is available from Ball Colegrave as pelleted seed for precision sowing in five distinct colours. For more information contact Ball Colegrave

customer services on: 01295 811833.

### A NEW FACE FOR BEDDING

The first ever seed-grown Angelonia series offers ease and convenience to growers and carefree performance for consumers and Parks bedding. Growing Serena<sup>™</sup> Angelonia from



seed is economical and easy – it branches well without pinching and flowers vigorously with no need for deadheading.

Serena<sup>™</sup> Angelonias can easily be combined in the greenhouse with warmer crops like Impatiens. Plants are ready to transplant four to five weeks after sowing and saleable in small pots or premium packs in 13-15 weeks.

Angelonias love the sun and heat. Serena<sup>™</sup> is no exception with a shorter garden height than vegetative varieties it is highly versatile and ideal for use in garden borders, mixed containers and Parks bedding schemes. For more information contact Ball Colegrave on: 01295 811833.

# NEW ORGANIC FERTILISERS

Demand for fertilisers which use only natural products is on the increase, and Scotts has recognised this need by introducing Greenmaster Organic. It is a granular formulation composed of a mix of organic and natural ingredients guaranteed free from disease, weeds or other contamination. The mineral and organic part provide the grass plant with essential nutrients, and the organic component stimulates soil microorganisms. Greenmaster Organic feeds the turf and stimulates soil life in one treatment. There are three products to choose from; high nitrogen and high potassium for fine turf, and Sportsmaster Organic, a high nitrogen version for sports outfields. These fertilisers provide a naturally slowrelease source of nutrients that ensure an even growth without growth peaks. They can help increase the Cation Exchange Capacity (CEC) of the soil, therefore increasing the efficiency of nutrient applications both now and in the future. The products also improve soil structure, natural nutrient cycling and breakdown of thatch.

For more information visit: www.scotts.com

# WIND TOLERANT NOZZLES



Strong winds play havoc with watering, especially during hot dry summers when greens and tees can bake if water can't reach the playing surfaces due to the wind factor. The summer of 2006 was such a summer, and may be a typical of future weather patterns in the UK. For courses where wind is a regular challenge to the normal watering needs, Rain Bird, the world's leading irrigation equipment manufacturer, has developed the new EAGLE 700/750 Wind Tolerant nozzles. These have been specially designed to combine a lower trajectory with innovative features that produce two essential factors:

 A larger water droplet size to counter the strength of the wind more effectively
 A specially adapted spray pattern -The combination of which makes the resulting water curtain far more wind tolerant.

For further information contact Rain Bird's Golf Manager for the UK and Ireland, Kneale Diamond, on: 01438 314583 or: kdiamond@rainbird.fr

#### LAWN EDGING



D J Turfcare Equipment Ltd has launched the Atom Golf Bunker Edger. Light and manoeuvrable, D J Turfcare claims the Atom can trim bunkers up to eight times faster than other edging devices. For more information visit: www.djturfcare.co.uk

# GDC CONTROLLER



Toro Irrigation believes a highly-innovative Golf Decoder Controller (GDC) system launched recently, is set to revolutionise golf course irrigation design and management. It will benefit everyone, they say, from golf course designers and irrigation consultants to installers and greenkeepers.

Graphic showing Toro's new GDC irrigation system, which can operate up to 800sprinkler stations per cable path, with up to 50 of them operating simultaneously, off only a single 2 x 2.5mm2 cable.

# LIQUID FERTILISER

Rigby Taylor has launched Microflow-CX, a range of multi-component liquid fertilisers with secondary elements and micronutrients for use on amenity turf.

These liquid fertilisers have low scorch potential and are absorbed through the leaves and roots of the grass plant. For more information visit: www.rigbytaylor.com

### YEAR-ROUND DISEASE CONTROL

Banner Maxx is a new fast-acting, broad spectrum, systemic fungicide from Syngenta that uses unique chemistry to deliver exceptional control of Anthracnose, Dollar Spot and Brown Patch in turf. The active ingredient in Banner Maxx is propiconazole, which acts in three ways, by protecting the turf, eradicating the disease, and curing any damage caused.

For more information visit: www.syngenta-crop.co.uk

#### HYDROSTATIC RAINWATER HARVESTER

Rainpiper.com has launched the first ever hydrostatic rainwater harvester that allows gardens and plants to be maintained without draining the mains water supply. Rainpiper stores over a ton of natural rainwater in vertically installed rain towers linked to a rainwater reservoir. The rainwater is dispersed by a hose giving a soft spray specifically designed not to damage plants and flowers.

Landscape management companies that rely on water will have instant access to harvested rainwater to maintain commercial landscapes without effecting the environment. Hydrostatic pressure forces the rainwater through a bespoke length of hose without having to use an electrically driven pump.

Rainpiper works independently of the main supply therefore can be used during a hosepipe ban. Users are supplied with a sign to display during water shortages to prove they are using harvested rainwater. Every Commercial Rainpiper is tailored to fit the individual building. The capacity can also be set to suit requirements, from six thousand litres upwards.

For more information visit: www.rainpiper.com

### **AIR-POT SYSTEM**

Deepdale Trees Ltd grow all their containerised trees in Air-pots – a relatively new technique of containerising trees and large shrubs.

Consisting of a reusable plastic sleeve which surrounds the root system. The sleeve, laid flat, resembles a honeycomb with slits in the top layer.

The slits are positioned on the outside of the container and allow air pruning of the roots. This produces a more fibrous root system, because the surface does not allow root circling.

For growing trees in Air-pots, each tree is placed on a layer of compost and tied to covered support wires.

For more information and details of Deepdale Trees Ltd's products, visit: www.deepdale-trees.co.uk



# **PRODUCT GUIDES**

Rolawn has produced a series of product guides, each featuring a specific product group in the company's expanded range. For domestic customers 'Choose it, Lay it, Live it' covers preparing and laying a Medallion® lawn, and an 'Aftercare Guide' details how it should be maintained.'Topsoil & Bark' highlights the benefits of selecting quality topsoil and bark, along with frequently asked questions and a handy calculator to determine requirements.

For landscape contractors, the 'Turfmaster™ System' explains the labour saving way to turf large areas in minimum time and 'Minster Pro™' highlights the key benefits and applications of Rolawn's new greens turf which utilises the most advanced cultivar technology.

The leaflets are available from Rolawn Depots, email: info@rolawn.co.uk or tel: 0845 604 6085

### ROLL UP AND ROLL OUT



Ultra Spreader International's latest newcomers to their existing range of spin and drop spreaders, tippers, trailers and screeners are the 'Ultra Mat' and the 'Ultra Diamond Brush'.

The 'Ultra Mat' is an all rubber dragmat. The mat is available in different sizes, making it ideal for large-scale treatments of any natural or synthetic grass area. The second product launched; the 'Ultra Diamond Brush' is a new diamond shaped broom which can be supplied with a different type of bristle for use on different surfaces. For more information visit: www. ultraspreader.com

### AMENITY SECTOR CLEANS UP FOR WASTE RECYCLING



Techneat Environmental has launched a new range of products engineered to help amenity managers and greenkeepers clean up for more effective waste plastics recycling. With tough waste management legislation and the cost of landfill disposal, businesses are increasingly looking at sustainable recycling routes for used pesticide containers that have been safely and thoroughly cleaned, to meet environmental obligations.

The new Techneat Environmental Can-Drain is a free-standing, self contained tank for draining triple-rinsed pesticide containers safely and quickly. The large-capacity covered hopper collects washings into a reservoir, which can be emptied back into the sprayer for safe disposal. The company has also introduced the clever Rinse Nozzle as a separate option, to wash the insides of plastic pesticide containers more effectively. For further information visit: www.techneat.co.uk

#### PRECISION BLENDED TOP DRESSINGS

Bespoke Blending and Bagging (BBB), run by Ecosolve Ltd, has launched the first customised service for precision blended top dressings, rootzone and soil amendments in the fine turf sector.

BBB has its own blending and bagging plant which uses state of the art equipment to produce any mix of product in a variety of particle sizes specifically for the requirements of individual greenkeepers, agronomists, soil amendment and turf maintenance specialists. For more information

visit: www.ecosolve.co.uk

# AMENITY GRASS SEED MIXTURES

A new catalogue which features all amenity grass seed mixtures in the MM range, has recently been published by Advanta Seeds.

The catalogue provides a user-friendly selection chart which enables greenkeepers and other professional turfgrass managers to locate the best mixture/mixtures for new or



overseeding projects. To obtain a copy of MM Amenity Grass Seed Mixtures 2007, email: paul.lees@advanta-seeds.co.uk or tel: 01522 861318.

### TOP AMENITY PLANTS DATABASE LAUNCHED

A 'Top Plants for Amenity Landscapes' database is being launched by the HTA in conjunction with the Landscape Institute to provide guidance and support to Landscape Architects and highlight some of the best and most widely available plants for use in amenity plantings. The database lists the top 50 trees, top 100 herbaceous (including grasses, perennials and bamboos) and the top 50 shrubs and it is available on a searchable website and also in the form of a free poster.

The lists have been compiled by the HTA using independent experts working closely with nurseries supplying the amenity plant market and in consultation with the Landscape Institute. The list can also be used alongside the National Plant Specification (NPS), which provides specification details for thousands of plants that can be used in landscape schemes. Visit: www.plantspec.info. for more information.

#### **GROWING DEMAND**



Bellwood Trees have seen a growing demand from golf courses for semi-mature trees to be used in landscaping the public areas of the course. Large trees are being used to provide an instant and dramatic impact in the clubhouse area, for both existing and new developments. This can be seen in the photograph of semi-mature Birch, just three months after being planted at The Duke's Course, St Andrews. For more information please visit: www.bellwoodtrees.com



# WILDFLOWERS

Alba Trees have introduced a range of 18 common British native wildflowers, grown from seed in 175cc cells. These can be planted almost all year round, moisture permitting. There is no need to create a clean seedbed; the plants can be planted direct. Competitive annual weeds do not have a chance to invade and choke the young plants. These will flower and set their own seed in due season thus establishing their own progeny. Growers will find that this can often be a more successful and cost-effective way of establishing wild flowers.

Availability varies throughout the year, contact Alba Trees on: 01620 825058 or visit: www.albatrees.co.uk



# **DESIGN PACKAGE**

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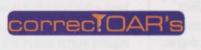
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Deepdale	<b>Deepdale Trees Limited</b> , Tithe Farm, Hatley Road, Potton, Sandy, Bedfordshire, SG19 2DX Tel: 01767 / 26 26 36 Fax: 01767 / 26 22 88 mail@deepdale-trees.co.uk www.deepdale-trees.co.uk	
	Civic Trees, Forestry House, 102 High Street, Tring, HP23 4AF, Tel: 01442 825401 jan@civictrees.co.uk www.civictrees.co.uk	
ELLWOOD TREES	<b>Bellwood Trees</b> , Brigton of Ruthven, Meigle, Perthshire, Scotland, PH12 8RQ Contact: Andrea Grey (Sales Manager) Tel: 01828 640219 Fax: 01828 640623 info@bellwoodtrees.com www.bellwoodtrees.com	
	Alba Trees plc, Lower Winton, Gladsmuir, East Lothian, EH33 2AL, Tel: 01620 825058, Fax: 01620 825316, sales@albatrees.co.uk www.albatrees.co.uk	
	A World of Golf Ltd, Generator Studios, Trafalgar Street, Newcastle upon Tyne, NE1 2LA Tel: 0191 230 6211 Fax: 0191 230 6279 www.aworldofgolf.com info@aworldofgolf.com	
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# **Organic Fertilisers: They're Coming of Age**

#### **By Hugh Frost**

A decade or so ago many greenkeepers and other sportsturf managers were quite taken with the idea of using so-called 'organic' inputs. However, for a number of people at that time, product performance did not meet their expectations. The reason for this was predominantly due to high expectations caused by over-selling in the market, together with biological misperceptions, inferior quality "copy-cat" products and an inadequate level of technical support.

Times have changed. Biological systems are better understood, companies and their products have evolved and at the same time there is a renewed emphasis on golf course ecology, environmental protection and input rationalisation. Several organic-type products are now persisting in the marketplace, therefore demonstrating their popularity, yet to too many people they remain an unknown quantity. It would be helpful to provide the golfing community with more accurate information, so that they are able to review the role of 'organic' inputs and decide for themselves. Read on...

Included within this category of 'organic' products is the largest group of golf course inputs, the plant nutrients, better known as fertiliser. It is this group which is now scrutinised more closely, though a better term for them would be 'plant growth stimulants' rather than fertilisers, as the activities of the organic components are more numerous and more complex than just solely providing soil fertility.



#### Defining 'organic' fertilisers

The term 'organic' is generally misused, as it is most commonly applied to all fertilisers that are not inorganic, mineral fertilisers. Broadly speaking, these so-called 'organic' fertilisers fall into one of three categories:

1. Predominantly inorganic fertiliser, with some components of organic origin, so giving some biological activity. These products are numerous in the market place.

2. Organic-based products with a predominantly biological activity, which usually contain some inorganic mineral component, to a greater or lesser degree. Products that fall into this category are generally fewer in number but more commonly used.

3. Fully organic, certified products that do not contain inorganic ingredients. These products are currently lacking in the golf marketplace

The second category of products listed above are generally those which most people describe as organic, though it would be more accurate to describe them as 'organic-based' as most still contain some level of inorganic nutrients. These minerals are included into most products to meet what most greenkeepers see as their turf needs, however, in reality it maybe that the inclusion of inorganic nutrients are less of a need to the plant and more of a want to the greenkeeper, by way of insurance. Given the pressure of the job it is entirely understandable for any greenkeeper to act in this way, though hopefully by reading the next few paragraphs greater levels of trust can be placed in the organic component of these organic-based fertilisers.

#### **Product contents**

Whatever its source, the main ingredient of organic-based fertilisers is also most likely to be the main source of nutrients within the product. The most common source for organics has previously been composted poultry litter, but feather meal is now also being used, whilst alternative composted products are also arriving on the market.

This organic base forms the backbone of the fertiliser and acts as a carrier for the other components of the product. These additional components will include the macronutrients (N-P-K), any micronutrients and a plethora of different types of biological growth stimulants and microbes. All these components, in conjunction with the organic matter, are able to provide either growth stimulus to the grass plants or add beneficial structural or microbial properties to the rooting zone. The various components, their benefits and applications are outlined below:

Organic matter - The source of the organicbase within a product is important. It needs to be easily broken down and so contain organic matter that is in a readily available form. Technically this is described as coming from an 'active' pool of organic matter, as opposed to a 'passive' pool of slowly degradable material. Many of the 'copy-cat' products that were pushed on the market in the past few years contained at least some organic matter from the 'passive' pool and so caused problems to the root zone on golf greens. Providing good quality organic matter carriers are used, then the essential character of a golf green will not be changed (just its performance amended as described in the proceeding section).

*Bio-stimulants* – These are a broad range of natural plant products, usually include seaweed (or kelp extract) for cytokinin production that stimulates root growth and limits leaf dieback. Other bio-stimulants include vitamins, humic acids for improved nutrient use efficiency and amino acids which form proteins that are the building blocks for plant growth.

Bacteria & fungi - A large group of organisms that have in the past been seen as only having a negative effect on turf but which we now know contain many beneficial micro-organisms. Organic-based products will vary in their approach to micro-organisms, from not specifying a product's content (or indeed fully knowing) to providing a full analysis of bacterial or fungal content. The benefits of the soil bacteria to the plant will range from making nutrients more available in the soil (e.g. from thatch), to assisting nutrient uptake into the plant, to competing with pathogenic bacteria. Fungi are either be free-living and assist in suppressing other negative fungi or in the

case of mycorrhiza fungi form symbiotic relationships with grass, so increase root growth and lead to improved nutrient and water use efficiency.

Standard inorganic fertilisers use ash and salts to act as the carrier for the mineral fertiliser component which do not provide any further advantage to the plant and indeed over time can acidify the soil, making other micronutrients less available. While this acidification may be desired in some instances to lower a high ph, it also reduces microbial activity, not just pathogenic bacteria but also beneficial bacteria that compete with disease and many others intricately involved in plant nutrition.

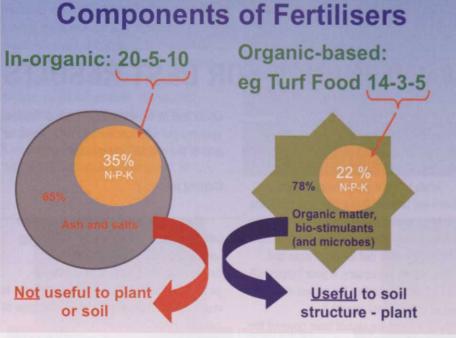
#### **Product performance**

Organic-based fertilisers utilise natural components, therefore they have a biological activity that works within natural plant and soil systems, so improving the growing environment for the plant and helping turf to be more robust. This is generally considered a preventative approach. nutrients available to plants through normal soil processes. The result is that, depending on the levels of inorganic components, the different fertilizers will have differing properties and so performance. This can be summarized as follows: golf course. Integration of organic and nonorganic inputs whilst in gradual transition to a more sustainable soil ecosystem helps to insure against unexpected performance and allows greenkeepers to rationalise their inputs with confidence.

eral ovide	In-organic fertilisers	Organic-based fertilisers
d making /hile ome educes hat ers	<ul> <li>Fast acting, force quick growth</li> <li>Response curve of products less variable</li> <li>More volatile and easily leached</li> <li>Performance of product tails off rapidly</li> <li>Tend to acidify soils</li> <li>Carriers more likely to scorch turf</li> <li>Good product adsorption requires water</li> <li>Salt content reduces water uptake</li> </ul>	<ul> <li>A steadier, more gradual response</li> <li>Product action proportionate to soil types</li> <li>Nutrients less volatile in soil profile</li> <li>Product performance fades in a slower manner</li> <li>More of product used of benefit to soil structure</li> </ul>
al iological t and	Cheaper to manufacture, at present	<ul> <li>Less likely to scorch turf</li> <li>More easily adsorbed into root zone</li> <li>Low salt deposited in soil, so greater water uptake</li> <li>Costs marginally high, less affected by oil price</li> </ul>

#### Organic-based application methods

It is often believe d by greenkeepers that they either have to be totally 'organic', or



By contrast, non-biological products generally use combinations of synthetic and natural ingredients to partially by-pass natural ecosystems, thereby seeking to get round obstacles of soil nutrition and achieve extra plant performance or to overcome disease. This is generally considered a curative approach.

What this means is that organic-based fertilisers do not 'spoon-feed' nutrients to the plant in the same way the mineral fertilisers do, instead they make the organic not. While there are now a growing number of golf courses that predominantly use an organic-based regime it is a misconception it is not possible to integrate biological and non-biological products. Indeed, providing greenkeepers are advised correctly, there can be many good reasons why a mixture of product types might provide them with a larger armoury of tools. Certainly an integrated programme of organic-based and mineral based products can be a useful first step to understanding how their biological activities work best on a specific

#### The future of organics

No-one in the organic marketplace would argue that they know everything about the biological activities of plants, soils and the related microbial products, especially as science does not yet have all the answers. However, as new concepts and possibilities are almost endless in plant science, in a similar way as human health, then there are going to be a myriad of new biological products coming forward for trials in the future. In the meantime greenkeepers can get used to the idea of using biological control methods to contain their pathogens in the same way as greenhouse managers have learnt to control theirs.

# Finally, as more pressure is placed on

society to rationalise their use of pesticides, nutrients in water sources are scrutinised in greater depth and so nutrient and water use efficiency becomes more important, then the role that biological products play are likely to become increasingly important in golf course management. This is will not happen overnight, but as greenkeepers gain more confidence, get better technical advice and experiment with new options then turf grass can be managed in a more 'organic' way.

Author: Hugh Frost, UK Technical Manager (Plant Care), Novozymes Biologicals. hugf@ novozymes.com tel: 07710-461359.



# **KEEP AN EYE ON MAINTENANCE FOR BEST RESULTS**

It goes without saying that ride on mowers, especially the cylinder models used on greens, tees, surrounds and fairways, must be well maintained and set up correctly to produce the optimum cut. This short article is a reminder of the basic checks and procedures necessary to maintain a machine that remains on cut from the beginning to the end of the season.

#### James de Havilland reports

Many ride-on machines will have recently completed their winter overhaul, but if they have not been out of shed recently a few checks prior to their first use is a sensible precaution. It is never a good idea to assume every adjustment will be spot on. It is also easy to forget the basics too. Virtually every modern ride on mower has a diesel power unit and hydraulic drive to the cylinders. Whatever the make or model, it's really worth checking all of the hydraulic connectors for any sign of leakage. Who wants to be responsible for dumping gallons of hot hydraulic fluid on the 18th green, just prior to an important early season tournament? Don't forget to check the fuel lines as well.

While in the engine compartment, check the battery. Make sure that the leads are fitted tightly and the terminals and connectors greased to prevent corrosion. Next check each cell for electrolyte and top up where necessary. A poor battery will typically make starting the mower difficult just when you least expect it.

Although a service should have covered this, check the filter screen in front of the radiator as a matter of routine. If clogged with old clippings, remove with an airline or stiff brush. Check the fuel level in the tank and, if possible, verify that the fuel indicator gauge is working correctly. A false reading can lead to the machine stopping mid-mow.

It's also worth checking the instrument panel to ensure all gauges and indicators are working correctly. A faulty gauge will not stop the machine but if it fails to alert the operator to an overheating power unit, it could lead to an unnecessary repair bill. Also check that all safety and operator presence systems are fully functioning. This should be part of the course risk assessment.

#### **Cutting units**

Once you are satisfied that the power unit is OK, it is time to look at the cutting units. These are obviously critical to determining the quality of your playing surface and there will be various elements to inspect and check, depending on the type of cylinder used.

First off, check the bottom blade. Make sure it is sharp and regrind if in doubt. If your cylinder manufacturer recommends an air gap, check the clearance between the reel and bottom blade with a feeler gauge and test the scissor action using a piece of paper. Remember, as Chris Perkins, Workshop Technician with Parks and Grounds Machinery, stated in the pedestrian mowers article last month, using the noncontact (air gap) method can reduce the wear on bottom blades by anything up to 50%. Also it is most important to carry out cylinder/bottom blade adjustments before setting the height of cut. As either is adjusted, the height of cut is also changed. Check for worn bearings in the front and/or rear rollers. An accurate height of cut cannot be achieved if there is free play in these bearings.

Turf groomers cut the lateral growth of the grass and stand the blades up to ensure a very consistent finish. If groomers are fitted, one of the first jobs is to set the blade depth.

This is done using a setting bar, with companies that include and Ransomes Jacobsen recommending that the blades are set no more than 0.8 -1mm below the height of cut to avoid any risk of scalping or turf damage. The setting bolt should just touch the groomer blade and then be taken back just a fraction to avoid contact. This is done at both ends of the unit to ensure a consistent depth is achieved. This is a workshop, as opposed to 'on the green', operation.

The Jacobsen groomer also features a course adjustment lever which, when released, stops the grooming process by moving the blades up and away from the grass. However, it continues to run to help keep the grooved front roller free of debris. These details differ between makes and models, so do not assume this applies, particularly if a recent swap between models has been made.

Ransomes Jacobsen and the other leading suppliers including John Deere and Toro, also recommend that rear roller brushes are fitted as they will keep the roller clean and help maintain a consistent height of cut. The Jacobsen designs are belt-driven and the belt tension should be checked to ensure they are functioning correctly.

Don't forget that these checks have to be done on all cylinders and groomers. On a greens/tees triple or five unit fairway mower, it's very easy to 'forget' the rear units, especially if it's not the swing-out type and difficult to access.

Finally, check the roller and cylinder bearings periodically. Look for play when spun, any unusual noises or any tightening as they rotate. If any anomalies are found, do not take the machine out. Consult your mechanic or local dealer.

Regular checks and routine maintenance are not 'rocket science', but they are essential for producing excellent sports turf. In a profession where greens staff are often maligned it is essential that equipment is kept in the best possible condition to give you the opportunity to refute the myth, that you 'simply cut grass.'

With thanks to Nigel Church, Ransomes Jacobsen.



A fairway mower will benefit from regular setting and maintenance checks, little and often care improving mowing results and reducing overall operating costs.



Powered brushes keep the rear roller clean and maintain height of cut



The belt of the rear roller brush drive should be checked to ensure correct tension







The course adjustment lever stops the grooming process. However, it continues to run and helps keep the grooved front roller free of debris

hydraulic connectors for any sign of leakage

Check all of the

On a greens/tees triple or five unit fairway mower, it's easy to 'forget' the

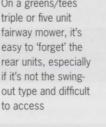
Make sure that

are fitted tightly.

Grease terminals and connectors to prevent corrosion. Check cells for electrolyte and top up where necessary

battery leads

to access





The setting bolt should just touch the groomer blade and then be taken back just a fraction to avoid contact

Turf groomers cut the lateral growth of the grass and stand the blades up to ensure a very consistent finish



Ensure all gauges and indicators are working correctly



